

## *Agonis fragrans* (Myrtaceae), a new species from Western Australia

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### Abstract

Wheeler, J.R., Marchant, N.G. and Robinson, C.J. *Agonis fragrans* (Myrtaceae), a new species from Western Australia. *Nuytsia* 13(3): 567–570 (2001). *Agonis fragrans* J.R. Wheeler & N.G. Marchant is described and illustrated. This species, previously recognized by the cut-flower industry by informal names, now requires scientific recognition to further its development for an essential oil. The differences between this species and *A. juniperina* Schauer are discussed.

### Introduction

Interest in species of *Agonis* (Myrtaceae) by the essential oil industry has led to the need for the formal recognition of this species ahead of a revision of the genus. *Agonis fragrans* has been recognized for many years by the cut-flower industry as Coarse tea-tree or Coarse Agonis, but only relatively recently has one of us (Chris Robinson) recognized it as a potential source of essential oil. It is in this latter context that a formal name is necessary to further its development.

### Description

*Agonis fragrans* J.R. Wheeler & N.G. Marchant, *sp. nov.*

*Agonis juniperinea* affinis, sed habitu fruticoso lignotuberoso, foliis grossis, fasciculis florum magis, bracteis bracteolisque latis a congeneribus diversa differt.

*Typus:* Marbellup Rd North, 6.2 km north of South Coast Highway, Western Australia, 26 July 2000, J.R. Wheeler 4044 (*holo:* PERTH; *iso:* AD, CANB, K, MEL).

*Shrub* to 2.4 m high, lignotuberosus. *Branchlets* with both short hairs and long pilose hairs. *Leaves* alternate, spreading and somewhat rigid, subsessile, linear to very narrowly elliptic, 7–22 mm long, 0.7–2(2.5) mm wide, entire, upper surface slightly concave when dry, glabrous apart from short hairs

towards the base of the upper surface and also sometimes sparse marginal hairs, with only the base of the midrib evident on the lower surface; base tapered; apex acute and somewhat shortly mucronate. *Flower clusters* axillary or terminating short axillary shoots, several- to many-flowered, globular or semi-globular to ovoid, (7)10–15 mm diam. *Flowers* sessile, 6–9 mm diam., subtended by a bract and 2 bracteoles. *Bract* broadly ovate to broadly obovate or circular, 2–3 mm long, 2.5–4(5) mm wide, concave, glandular-punctate and somewhat verrucose on the keel, glabrous or with a few hairs outside, particularly on the keel and with fine appressed hairs inside in the lower half; apex obtuse or very obtusely acuminate with a minute apiculum, the apex of the outer bract to the whole cluster sometimes more acute. *Bracteoles* 2, broadly elliptic or broadly obovate to very broadly obovate or circular, 2.5–3 mm long, 2–4 mm wide, concave, glandular-punctate and usually somewhat verrucose on the keel, glabrous or with some hairs particularly on keel; apex obtuse or emarginate. *Hypanthium* obconic, 1.5–2.5 mm long, rugose, irregularly puberulous but often sparsely so, also with a tuft of hairs at the base. *Sepals* 5, persistent, white, ovate-triangular, (1.2)1.5–2 mm long, glabrous, acute to subacute. *Petals* 5, persistent, white but sometimes tinged pink in bud and with a pinkish claw, with a broadly obovate to circular limb 2–3 mm diam. *Stamens* 10, one opposite each sepal and each petal; filament incurved, 0.5–0.8 mm long; anther elliptic, 0.3–0.4 mm long. *Ovary* summit glabrous; ovules (2)3 per cell. *Style* 0.5–1.8 mm long. *Fruit clusters* globular to ellipsoid, 8–10 mm long, 8–10 mm wide; capsules broadly turbinate to cup-shaped, 2–3.5 mm long, 2.5–3.5 mm wide, puberulous and with a basal hair tuft. (Figures 1, 2)

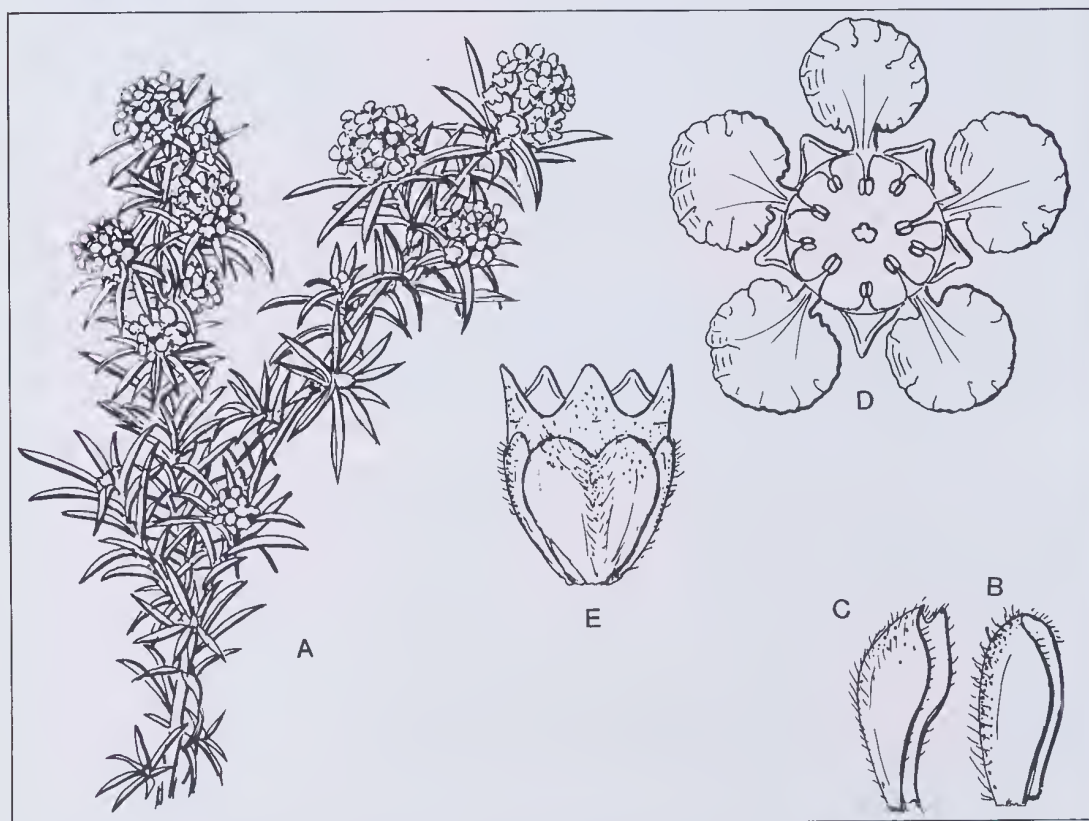


Figure 1. *Agonis fragrans*. A – flowering branch, B – bract, C – bracteole, D – flower, E – young fruit with bracteole (petals removed).

*Selected specimens examined* (all PERTH). WESTERN AUSTRALIA: Walpole–Nornalup National Park point 305, 3 May 1989, *A.R. Annels* 732; Plot 5022, Romance Rd, 2 km N of Break Rd, 28 km NW of Denmark, 20 Nov. 1991, *A.R. Annels* 2006; Payne Rd, c. 4.5 km E of Bussell Highway, c. 14 km NE of Cowaramup, 31 May 1995, *B.J. Lepschi* 1867 (duplicates AD, BRI, CANB, NSW, US all *n.v.*); Storry Rd off Pemberton–Nannup road adjacent to private property on Donnelly River, State Forest Jasper, 23 June 1991, *N. McQuoid* 171; Site B53, 600 m along unnamed track off Nanga Rd, 500 m N of intersection with Willowdale Rd, 24 July 1997, *G. Paull* 248; N side of Kernutts Rd, 1.3 km E of Denmark–Mount Barker road and 3.6 km N of Albany–Denmark highway, 29 Jan. 1998, *C.J. Robinson* 1208; Peter Buxton's property, Plantaginet Location 6634 Redmond West Rd, 18 km WSW of Redmond townsite (cultivated from locally collected seed – oil voucher), 18 Feb. 1998, *C.J. Robinson* 1213; 135 mile post on Albany Highway (between Williams & Kojonup), Oct. 1966, *W. Rogerson* 292; Site 133, 2.5 km SE of Mt Johnstone, 4 Sep. 1997, *D. Trenowden* 195; Gum Link Rd, W of Nornalup Rd, 10 Aug. 1991, *J.R. Wheeler* 2667; Walpole–Nornalup National Park, Nut Rd, 1 Sep. 1991, *J.R. Wheeler* 2939; Walpole–Nornalup National Park, 0.5 km E of Deep River bridge, track opposite Meredith Rd, 10 Aug. 1992, *J.R. Wheeler* 3098.



Figure 2. Photograph of flowering branch of *Agonis fragrans* taken by C.J. Robinson.

*Distribution.* Occurs from Nillup and Lake Jasper to east of Denmark from Redmond and Marbellup, with a single record from between Williams and Kojonup.

*Habitat.* Occurs in swamps on acid peaty sand and in the seasonally waterlogged margins of broad upper valleys, often in association with *Beaufortia sparsa* and *Homalospermum firmum*. *Agonis fragrans* often occurs near *A. parviceps* Schauer (but usually lower in the profile), although the latter species is found in a great variety of habitats. Also found near *A. juniperina* Schauer of swamps and waterways.

*Phenology.* Flowers mostly January to May but petals persist throughout fruiting.

*Etymology.* The name reflects the fragrant nature of both the foliage and the extracted oil.

*Conservation status.* Recorded from a number of localities within a wide distribution. Not believed to be threatened.

*Notes.* *Agonis fragrans* was previously recognized at the Western Australian Herbarium as *Agonis* sp. Coarse tea-tree (*J.R. Wheeler* 2939) and as *Agonis* sp. Coarse Agonis (*J.R. Wheeler* 2939). It has been recognized under the former name by the Export Flora list and as "Coarse tea-tree" by the cut-flower industry. Prior to the use of these informal names, the species was confused with *Agonis juniperina*.

*Agonis fragrans* can be distinguished from *A. juniperina* in its habit and flowering time as well as in its foliage and flowers. *A. juniperina*, commonly known as Wattie or Warren River Cedar, is a large tree with shorter softer leaves, whereas *A. fragrans* is a shrub with thicker and more rigid leaves. *Agonis juniperina* has smaller clusters of smaller flowers, which have slightly shorter and narrower bracts and bracteoles as well as smaller sepals and petals. *Agonis fragrans* has erect flowering branches whereas *A. juniperina* has somewhat weeping flowering branches. *Agonis fragrans* has a lignotuber and reportedly resprouts after fire whereas *A. juniperina* lacks a lignotuber and is recorded as being killed by fire.

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